AMHERST ISLAND WIND ENERGY PROJECT

PROJECT DESCRIPTION REPORT

File No. 160960595
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Prepared for:

Windlectric Inc.
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1.0 Introduction

1.1 PROJECT OVERVIEW

Windlectric Inc. (the Proponent or Windlectric) is proposing to develop, construct, and operate the 56 - 75 megawatt (MW) Amherst Island Wind Energy Project (the Project) within Loyalist Township (the Township) in the County of Lennox and Addington (the County) in eastern Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province.

The basic components of the proposed Project include up to 36 Siemens wind turbines. The turbine model proposed utilizes the same 36 turbine pad locations that have been subject to the assessment required under the Renewable Energy Approval (REA). The layout includes 24 Siemens SWT-2.3-113 2300 kW and twelve (12) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. The number of wind turbines will be dependent upon final selection of the model of the wind turbine most appropriate to the proposed Project.

The proposed Project will also include a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a transmission line, truck turnaround areas, a submarine cable, an operations and maintenance building, permanent dock, a substation, a switching station, an un-serviced storage shed, one connection point to the existing electrical system, cable vault areas, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), and turbine access roads with culvert installations, as required, at associated watercourse crossings.

Temporary components during construction may include staging areas for the turbines, access roads, met tower(s), collector lines and transmission line as well as crane paths, a temporary dock, site office(s), batch plant, central staging areas, and associated watercourse crossings. The electrical power line collector system would transport the electricity generated from each turbine to the substation, along the submarine cable to the mainland and then to a switching station located near to an existing Hydro One Networks Inc. (HONI) 115 kV transmission line.

The Proponent has elected to assess and seek approval for some alternative Project configurations. The REA application process will consider:

- two alternative mainland transmission line routes;
- two alternative switching station locations and corresponding point of common coupling with the HONI line;
- three alternative mainland temporary dock locations along the mainland;

- a submarine cable with three alternative submarine cable routes near the mainland;
- three alternative mainland submarine cable landing locations and corresponding cable vault locations;
- up to three alternative met tower locations; and,

  up to three potential locations for an operations and maintenance building.

Final selection of the sites to be used would be based on the results of consultation activities, detailed design / engineering work, and the conditions experienced during construction.

Windlectric has retained Stantec Consulting Ltd. (Stantec) to prepare a Renewable Energy Approval (REA) application, as required under Ontario Regulation 359/09 - Renewable Energy Approvals under Part V.0.1 of the Act of the *Environmental Protection Act* (O. Reg. 359/09). According to subsection 6(3) of O. Reg. 359/09, this Project is classified as a Class 4 Wind Facility. The *Draft Project Description Report* is one component of the REA application for the Project, and has been prepared in accordance with O. Reg. 359/09, and the Ministry of the Environments' (MOE) *Technical Guide to Renewable Energy Approvals* (MOE 2011).

1.2 REPORT REQUIREMENTS

The purpose of the *Draft Project Description Report* is to provide the public, Aboriginal communities, municipalities, and regulatory agencies with an understanding of the proposed Project, including any environmental effects that may result from engaging in the proposed Project.

The *Draft Project Description Report* has been prepared in accordance with Item 10, Table 1 of O. Reg. 359/09 and the Ministry of the Environment's (MOE's) guidance document *Technical Guide to Renewable Energy Approvals.*

The following table summarizes the requirements of this report as specified under O. Reg. 359/09:

Table 1.1: Project Description Report Requirements (as per O. Reg. 359/09 – Table 1)

Requirements	Section Reference
• Any energy sources to be used to generate electricity at the renewable energy generation facility.	2.2
• The facilities, equipment or technology that will be used to convert the renewable energy source or any other energy source to electricity.	2.3
• If applicable, the class of the renewable energy generation facility.	1.1
• The activities that will be engaged in as part of the renewable energy project.	2.5
• The name plate capacity of the renewable energy generation facility.	2.1
• The ownership of the land on which the project location is to be situated.	1.2
• Any negative environmental effects that may result from engaging in the project.	3.0
• An unbound, well-marked, legible and reproducible map that is an appropriate size to fit on a 215 millimetre by 280 millimetre page, showing the project location and the land within 300 metres of the project location.	Appendix A

2.0 General Information

2.1 PROJECT INFORMATION

The following provides a list of project information:

Name of the Project:	Amherst Island Wind Energy Project
Proponent:	Windlectric Inc.
Energy Source:	Wind energy. No supplementary fuel sources will be used to generate electricity.
Nameplate Capacity:	Up to 75MW
Class of Facility:	Class 4 Wind Facility
Land Ownership:	Privately owned lands, within Municipal and County road right of ways, within municipal unopened road allowances, Crown Land (bed of Lake Ontario).

2.2 CONTACT INFORMATION

The proponent for the proposed Project is Windlectric Inc. (a subsidiary of Algonquin Power Co.). The proponent is responsible for the design, construction, operation, and decommissioning of the proposed Project.

Windlectric's office and contact for the proposed Project is:

Name: Sean Fairfield
Title: Senior Manager – Project Planning
Company: Algonquin Power Co.
Address: 2845 Bristol Circle,
Oakville, ON L6H 7H7
Tel: 905-465-4518

or,

Name: Alex Tsopelas
Title: Project Manager, Renewables
Company: Algonquin Power Co.
Address: 2845 Bristol Circle,
Oakville, ON L6H 7H7
Tel: 905-829-6388

The proponent's contact information for project questions, comments and consultation is as follows:

Project Name:	Amherst Island Wind Energy Project
Address:	c/o Windlectric Inc. 2845 Bristol Circle, Oakville, ON L6H 7H7
Project Telephone:	1-855-466-8068
Project Fax:	905-465-4514
Project Email:	windlectric@amherstislandwindproject.com
Project Website:	www.amherstislandwindproject.com

The lead consultant for preparation of the Renewable Energy Approval (REA) application is Stantec Consulting Ltd. ("Stantec"). Stantec provides professional consulting services in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics for infrastructure and facilities projects. The consultant's office and contact information is:

Name:	Rob Rowland
Title:	Senior Project Manager
Company:	Stantec Consulting Ltd.
Address:	Suite 1 - 70 Southgate Drive Guelph, ON N1G 4P5 Tel: 519-836-6966 ext. 550

or,

Name:	Kerrie Skillen
Title:	Project Manager
Company:	Stantec Consulting Ltd.
Address:	3430 South Service Road, Unit 203 Burlington, ON L7N 3T9 Tel: 905-931-3923

2.3 PROJECT LOCATION

The proposed Project will be entirely located within Loyalist Township (the Township) in the County of Lennox and Addington (the County) in eastern Ontario.

The Project Location includes lands on Amherst Island, and a corridor stretching between the Island and the mainland where the submarine cable is proposed. The mainland portion of the Project Location stretches from the mainland shoreline, north of the Invista Transformer Station and is generally bounded by i) County Road 4 to the West; ii) the Canadian National Railway line to the North; and iii) approximately 500 m East of Jim Snow Drive to the East.

In accordance with O. Reg. 359/09, the Project Location includes all land and buildings/structures associated with the Project and any air space in which the Project will occupy. This includes structures such as turbines, access roads and collector lines as well as any temporary work areas (the 'constructible area' for the Project) which are required to be utilized during the construction of the Project. The entire constructible area may not be used at each Project Location. The constructible areas have been reduced in size in areas where constraints exist (e.g. natural features) and construction will be limited to the smaller area.

The boundary of the Project Location is used for defining setback and site investigation distances according to O. Reg. 359/09.

Settlements in the general vicinity of the Project include Stella, Emerald, Millhaven, Ernestown, Amherstview, and Bath.

The proposed Project is not located in any areas protected under provincial plans and policies described in O. Reg. 359/09, including the Greenbelt Plan, Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan, and the Lake Simcoe Protected Plan. There are no Provincial Parks located within the general vicinity of the Project Location.

The Project Location is shown in **Appendix A**.

2.4 OTHER REQUIRED APPROVALS

At the federal, provincial and municipal level multiple permits, licenses and authorizations may be required to facilitate the development of the proposed Project, in addition to the REA. The ultimate applicability of all permits, licenses and authorizations will be determined and based on the Project's detailed design.

2.4.1 Federal

A Federal Screening report is not expected to be required for the proposed Project, as it is not anticipated that it will cause a 'trigger' under the *Canadian Environmental Assessment Act* (CEAA), such as a Harmful Alteration, Disruption or Destruction of fish habitat under the *Fisheries Act*, or application for project funding under a future program similar to *ecoEnergy for Renewable Power*. However, the consultation program for the proposed Project will include all federal departments and agencies typically interested in wind power projects (e.g., Department of National Defense, Environment Canada, Transport Canada, etc.). Potential federal permits and authorizations that may be required for the Project include those listed in Table 2.1 with the potential for additional approvals if requested by regulatory agencies.

Table 2.1: Federal Permits and Authorizations

Permit / Authorization	Administering Agency	Rationale
Aeronautical Obstruction Clearance	Transport Canada – Aviation Division	Turbine lighting and marking
Land Use Clearance	NavCanada	Aeronautical safety mapping and designations
Navigational Clearance	Transport Canada – Marine Division	Crossing a navigable watercourse Installation of temporary dock Installation of permanent dock
Fisheries Act Authorization	Fisheries and Oceans Canada	Watercourse crossings. Harmful alteration, disruption, or destruction of fish and/or fish habitat

2.4.2 Provincial

In addition to REA, all provincial permits and authorizations required for the proposed Project will be determined, and may include those listed in Table 2.2.

Table 2.2: Key Provincial Permits and Authorizations

Key Permit / Authorization	Administering Agency	Rationale
Approval of Connection	Independent Electricity System Operator (IESO)	Electrical interconnect with IESO regulated network.
Connection Assessment	IESO	Integration of project with IESO-controlled transmission system.
System Impact Assessment	IESO	Integration of project with IESO-controlled transmission system.
Customer Impact Assessment	Hydro One Networks Inc. (HONI)	Integration of project with Hydro One and effects to customers.
Connection Cost Recovery Agreement (CCRA)	HONI	Recovery of costs to grid operator of changes to allow connection.
Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses Permit	Cataraqui Region Conservation Authority	Work within floodplains, water crossings, river or stream valleys, hazardous lands and within or adjacent to wetlands. Projects requiring review, *Fisheries Act* authorization and/or assessment under the *Canadian Environmental Assessment Act* are forwarded to the Department of Fisheries and Oceans (DFO).
Certificate of Inspection	Electrical Safety Authority (ESA)	A record that electrical work complies with the requirements of the Ontario Electrical Safety Code.
Generator's License	Ontario Energy Board (OEB)	Generation of electrical power for sale to grid.
Leave to Construct	OEB	Authorization to construct power transmission lines.
Notice of Project	Ministry of Labour	Notify the Ministry of Labour before construction begins.
Special vehicle configuration permit	Ministry of Transportation (MTO)	Use of non-standard vehicles to transport large components.
Transportation Plan	MTO	Adherence to road safety and suitability.

Table 2.2: Key Provincial Permits and Authorizations

Key Permit / Authorization	Administering Agency	Rationale
Highway Entrance Permit	MTO	Entrance permit for new or upgraded road entrances onto a provincial highway Interference or obstruction of the highway.
Change of Access and Heavy/Oversize Load Transportation Permit	MTO	Compliance with provincial highway traffic and road safety regulations.
Wide or excess load permit	MTO	Transportation of large or heavy items on provincial highways.
Endangered Species Act permit	Ministry of Natural Resources (MNR)	If provincially listed species at risk or their habitat are present.
Emission Summary and Dispersion Modeling (ESDM) Report	MOE	Documentation for emissions from temporary concrete batch plant
Disposition of Crown Land Authorization	MNR	Project components crossing a navigable watercourse subject to the Public Lands Act.

2.4.3 Municipal

Several permits and authorizations may also be required from the Township and/or the County (Table 2.3).

Table 2.3: Municipal Permits and Authorizations

Key Permit / Authorization	Rationale
Municipal Consent, Work within the R.O.W	Required for works in municipal road allowances or unopened road allowances.
Consent/Severance Application	Required if easements over private lands required.
Consent – Tree Cutting	If required, authorization from the Township/County as necessary for pruning or removal of trees within road allowances.
Road Cut Permit	May be required for access roads off of county roads or works to county roads.
Pre-Condition Survey	Assessment of pre-construction conditions for engineering staff.
Building Permit	Compliance with building codes.
Entrance Permit	Entrance from county roads.
Transportation Plan	Adherence to road safety and suitability.
Additional Plans related to general engineering (e.g. siltation control, lot grading, plan of services, etc.), installation of temporary and/or permanent dock, water, wastewater, storm water, transportation, and geotechnical	Required supporting information/plans required by the Township and the County.

3.0 Project Components

This section provides a description of the major equipment and infrastructure associated with operation of the Project.

3.1 WIND TURBINE GENERATORS

The proposed Project will include up to 36 Siemens wind turbines. The turbine model proposed utilizes the same 36 turbine pad locations that have been subject to the assessment required under the Renewable Energy Approval (REA). The layout includes 24 Siemens SWT-2.3-113 2300 kW and twelve (12) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. The turbines under consideration have the same physical footprint. Windlectric has completed the REA such that any wind turbine model under consideration could be placed in the layout provided in **Appendix A**.

A summary of the basic specifications of the turbine models being considered is provided in Table 3.1 below.

Each of the wind turbine installations would consist of the following key components:

- Concrete foundation;
- Steel support tower (comprised of 5 sections);
- Nacelle containing the electrical generator;
- Hub (rotating structure that holds the turbine blades);
- 3 rotor blades;
- A pad mount transformer to convert power from 690 V to 34.5 kV; and,
- Electrical controls and connections.

Detailed information about the specific turbine models are provided in the *Draft Wind Turbine Specifications Report*.

Table 3.1: Basic Turbine Specifications

Operating Data	Specification
General	
Rated capacity (kW)	2300 kW/2221 KW
Cut-in wind speed (m/s)	3 m/s
Cut-out wind speed (m/s)	25 m/s
Rotor	
Number of rotor blades	3
Rotor diameter (m)	113 m

Table 3.1: Basic Turbine Specifications

Operating Data	Specification
Blade length (m)	55 m
Swept area (m^2)	10,000 m^2
Tower	
Hub height (m)	99.5 m
Tip height (m)	154.5 m

3.2 ACCESS ROADS

Approximately 35 km of new access roads are required for installation and operation of the Project components including wind turbines, met tower(s), operations and maintenance building, substation, temporary dock, permanent dock and switching station. Where possible, access roads have been planned in a manner that reduces the amount of land required to access the Project components or utilizes existing agricultural laneways, thus reducing potential impacts on the existing environment. New access roads will be constructed as required to provide access to Project components.

Access roads will be approximately 4 - 6 metres wide and will not require resizing for the operation phase, with the exception of the entrances off the Township or County roads that require wider turning radii, of approximately 50 m, during construction.

Some access roads require turnaround areas for delivery trucks. These turnaround areas will be the same width as access roads, with turning radii.

3.3 WATER CROSSINGS

Permanent culvert installations would be required along access roads and associated underground collector and data lines that cross watercourses. All crossings would require a permit approval from the Cataraqui Region Conservation Authority (CRCA) and/or the Department of Fisheries and Oceans (DFO).

Culverts required for any water crossings are described in the *Draft Water Assessment and Water Body Report*.

3.4 ELECTRICAL INFRASTRUCTURE

3.4.1 Turbine Transformers and Collector system

A pad mount transformer, located on the ground adjacent to the tower of each wind turbine, is required to transform the electricity created in the nacelle to a standard operating power line voltage (i.e. 690 V to 34.5 kV). The transformers will be approximately 2 m x 2 m.

A 690 V cable runs down the turbine tower to the pad mount transformer. From the pad mount transformer, underground 34.5 kV collector lines will carry the electricity to the municipal road allowances following the turbine access roads or, along the most direct path possible between two turbines (i.e. across a field), on private land, to the substation.

All proposed collector lines have been routed on private lands where landowners have agreements with the Proponent. Where possible, the underground and/or overhead collector lines have been incorporated into the design of the access roads to reduce the area required for construction and minimize the potential construction impacts. Junction boxes are required at the junction of an underground collector line going from private land to the public road allowance.

Some sections of the collector system may have to be installed above ground if required to pass sensitive natural features or other obstacles.

Data cabling, if installed, would run with the collector lines, whether underground or overhead.

3.4.2 Substation

Associated with the Project will be a substation. At the substation, the accumulated power from the collector lines will be transformed from a 34.5 kV collection voltage to a 115 kV transmission voltage. The substation will be located on private land on the north side of 2nd Concession Road between Stella 40 Foot Road and Dump Road. The substation will consist of a prepared area of approximately 80 m by 100 m in size. A chain link safety fence will enclose the substation. A locked vehicle gate will allow for maintenance access.

The substation will house the switching, control, protection, communication and metering systems required to support the operation of the substation. The substation will include one (1) 34.5/115 kV transformer.

A sound attenuation wall will be built at the substation transformer. The barrier will be continuous and its surface density will be 184 kg/m2, exceeding the 20-kg/m2 requirement established by MOE.

An access road for the substation will be constructed from 2nd Concession Road.

The substation will be operated, monitored and controlled 24-hours a day via a telecommunication system.

A conceptual drawing of the substation is shown in Figure 6.

3.4.3 Transmission Line

The 115 kV (nominal) transmission line connecting the substation to the Hydro One Networks Inc. (HONI) electrical grid can be broken into three distinct geographic sections:

1. Amherst Island: approximately1.5 km of overhead or underground line to connect the substation with the submarine cable.

2. Lake Ontario: approximately 4.5 km of submarine cable to connect Amherst Island to the mainland.

3. Mainland: there are currently two options for the transmission line route on the mainland.

Mainland Transmission Line Option 1: the transmission line would be comprised of approximately 0.7 km of underground or overhead line, across Highway 33 (in consultation with the Ministry of Transportation) to a switching station located near the Invista Transformer Station, where it will be connected to the to an existing HONI 115 kV transmission line (Q6S) which currently connects to the Invista Transformer Station. In order to connect to the HONI QS6 three (3) new wooden poles will be installed by HONI within their approved right of way.

Mainland Transmission Line Option 2: the transmission line would be comprised of an approximately 1.7 km underground or overhead cable from the cable vault, across Highway 33, along the east side of Jim Snow Drive, to a switching station located north east of the intersection of Jim Snow Drive and Taylor Kidd Blvd, then along the north side of Taylor Kidd Blvd. where it will connect to the HONI Q6S. Consultation with the Ministry of Transportation and the County of Lennox and Addington will be required for the placement of the line. In order to connect to the HONI QS6 three (3) new wooden poles will be installed by HONI within their approved right of way.

A conceptual drawing of the cable termination on the mainland is shown in Figure 7 and 8.

The land-based transmission line on Amherst Island will be constructed as an overhead or underground line. If required, a 115 kV riser will be installed to transition from the overhead line to the submarine cable. A conceptual drawing of the submarine cable termination on Amherst Island is shown in Figure 9.

The Township will be kept informed about the final design of the 115 kV cable risers will be done in consultation with the Township.

3.4.4 Submarine Cable

A submarine cable is required to convey electricity from Amherst Island to the mainland.

Specifications (final specifications subject to final manufacturer)

- Voltage: 115kV (nominal)
- Material: galvanized steel armour cable (crosslinkable polyethylene (XLPE) insulation)
- Diameter: 170mm ± 20mm
- Conduit: High-density polyethylene (HDPE) schedule 40 and diameter is 14” ± 2”

The submarine cable will be protected by electrical protection relays and high voltage circuit breakers, as well as remote teleprotection to HONI’s system. A cross section of a submarine cable is shown in Figure 10 as an example.

The submarine cable will also contain a fibre optic data cable to facilitate supervisory control and data acquisition (SCADA) and protection requirements.

The submarine cable will extend from the landfall location on Amherst Island, approximately 750 m west of Stella, to a landfall near the intersection of Jim Snow Drive and Bath Road on the mainland. Three landfall locations on the mainland are being considered as part of this REA application. Only one option will be constructed and used as part of the Project.

The three submarine cable landfall locations being considered on the mainland are:

1. South of Jim Snow Drive
2. South of the Invista Transformer Station
3. Approximately 300 m west of Option 2.

The submarine cable will connect directly to the overhead or underground line on Amherst Island and the underground or overhead line on the mainland with splices located in concrete cable vaults approximately 50 m inland from both shorelines. A conceptual drawing of the cable vaults is shown in Figure 11.

To facilitate the installation of the submarine cable and to provide an additional level of protection, Windlectric is proposing to utilize a protective cable technology (such as steel armouring or a protective conduit) at the two landings. The use of armouring or conduits could require trenching near the shoreline. The submarine cable will be laid to avoid any water intakes. The two submarine cable ends (island side and mainland side) would be pulled through or trenched into the buried concrete cable vaults.

Nearshore survey work at the landfall locations has been completed to confirm the location of existing utilities and the geophysical characteristics of the lake bottom that will be encountered when installing the conduits.

Windlectric has, and will continue, to consult with DFO, as required, to ensure compliance with DFO's *Operational Statement for Underwater Cables*.

The proposed route of the submarine cable crosses the existing MTO air bubbler system, which is used for ice control on the water surface, to allow for the Amherst Island Ferry to travel between the mainland and the island during the winter months. Windlectric has, and will continue, to consult with MTO, as required, to determine an approach for crossing the Amherst Island Ferry bubbler system.

3.4.5 Switching Station

Associated with the proposed Project will be a switching station where the electrical infrastructure will be connected to the existing HONI QS6. The switching station will consist of a prepared area of approximately 2500 m^2 in size and will be located on private land.

As discussed in Section 3.4.3 there are currently two options for the mainland transmission line route. Each option requires a switching station.

For *Mainland Transmission Line Option 1* the switching station would be located near the Invista Transformer Station. A conceptual drawing of the switching station on the Invista property is shown in Figure 12.

For *Mainland Transmission Line Option 2* the switching station would be located north east of the intersection of Jim Snow Drive and Taylor Kidd Blvd. A conceptual drawing of the switching station is shown in Figure 13

3.4.6 Island Dock

As part of the proposed Project, a permanent docking facility is required on Amherst Island to meet shipping and construction requirements. The dock structure has to accommodate large barges and be capable of handling heavy items associated with the construction of the proposed Project. The dock will be located approximately 750 m west of Stella.

The dock types under consideration are as follows (note: the labeled designations below correspond to conceptual design nomenclature information that was submitted to the Department of Fisheries and Oceans):

1. Dock Type Option 2 - Steel frame on rock lake bottom (posts) with concrete slab decking. Requires a concrete abutment.

2. Option 2A – Drive piles into lake bottom and level at pile caps. Platform (decking) constructed of a light steel frame or concrete slabs on the piles. Requires a concrete abutment.

3. Option 3 – Drive piles into lake bottom and level at pile caps. Platform is concrete slabs with sides and bottom that is back-filled with gravel. Requires a concrete abutment.

All of the above options include a length of fixed dock of approximately 30 m by 7 m in size [+/- 50%], with a single jack-up barge, of approximately 20 m by 12 m in size [+/- 50%], on the off-shore end that is adjustable due to water levels changes. Total area (above the water) for the dock including the jack-up barge is 450 m2 [+/- 50%].

The dock design, and construction will be completed in consultation with the DFO, as required, to ensure compliance with their *Operational Statement (OS) for Dock and Boathouse Construction*.

3.4.7 Operations and Maintenance Building

An operations and maintenance building will be required on the island to facilitate the day-to-day operations of the Project. The building footprint is approximately 1100 m^2 while the basic dimensions of the building would be approximately 30 m x 60 m. The footprint for the entire yard for the building is approximately 4900 m^2.

The building will be located on private land and have space for parking and on-site storage. The building will include office space, warehouse and workshop space, kitchen, and restrooms. It would also include areas for storage of equipment and spare parts, and would have a secure area for hazardous materials and lubricant storage.

The operations and maintenance building yard may include a chain link fence. The proposed layout for the operations and maintenance building is shown in The proposed layout for the operations and maintenance building is shown in Figure 14.

Several locations are being considered for the location of the operations and maintenance building. Only one location will be used as part of the Project.

The wind farm will be operated, monitored and controlled 24-hours a day. To facilitate this monitoring, fibre optic data cable and/or wireless technology would be used. If data cabling is used it will be installed in conjunction with the collector line system, from each wind turbine to the substation and then to the operations and maintenance building.

An underground septic tank (capacity of 10,000L) and aboveground non-potable water tank (capacity of 10,000L) would service the operations and maintenance building. The final design of the septic system would conform to local building code and health unit requirements.

No groundwater or surface water supplies are anticipated to be used for the facility. Above ground water tanks for non-potable and potable water will be installed. It is expected that water will be used to hose down the floor or the workshop. A sump/drainage pit will collect the residues and drain to the septic system.

Electrical power for the operations and maintenance building will be delivered by an overhead HONI line, which will terminate on a transformer pole adjacent to the facility. The transformer will step down the power supply to a voltage that can be utilized within the operations and maintenance building. The final connection of the power will be made through underground cable from the transformer pole to the building electrical service located within the building.

3.4.8 Storage Shed

An unserviced storage shed will be situated across Art McGinns Road from S17 and S10. The building will measure approximately 6 m x 8 m, situated on a gravel base area of approximately 7m x 9 m base, and is anticipated to be a prefabricated engineered structure with a concrete foundation that will extend below the frost line. The building will house equipment and spare parts to be used during construction and operations of the Project.

3.4.9 Met Tower

1-3 permanent met towers would be installed for use during the operation phase of the Project. The met tower(s) would be a steel lattice structure with a height of 60 m or 100 m.

The met tower(s) foundation design is dependent on ground conditions and is typically a steel reinforced concrete-filled pedestal foundation. The met tower(s) will either be freestanding supported entirely by the foundation or would have guy wires for lateral support anchored with reinforced buried concrete. The 100 m met tower foundation will be approximately 5 m x 5 m, and its associated anchor blocks (if required) will be approximately 2 m x 2 m. The 60 m met tower foundation will be approximately 1 m x 1 m, and its associated anchor blocks (if required) will be approximately 1 m x 1 m.

The met tower(s) will carry instrumentation for collecting wind data to support operation of the Project. Power and data cabling for the met tower(s) would be trenched in from the nearest collector line system.

Windlectric has a 60 m re-instrumented tubular guyed met tower which was installed in 2005. This met tower has been used to identify the quality of wind resource for the proposed Project. The wind data collected will be used to determine the best orientation of the wind turbines. This tower is a prospecting tower and may be removed upon reaching commercial operation.

Access for installation of new met tower(s) is required. See Section 3.2 for more information on access roads.

3.5 TEMPORARY COMPONENTS

Lands to be temporarily used during the construction of the proposed Project are for turbine, access road, met tower, collector line and transmission line staging areas, crane paths, a temporary dock, site office(s), batch plant, central staging areas, and associated watercourse crossings.

Any temporary office buildings, including the proposed site office(s), used during construction will not be serviced, and would be placed within the delineated construction work areas.

Following construction activities, all of the temporary locations will be restored to pre-existing conditions. Restoration work would start following installation of each wind turbine and removal of all construction materials and equipment from each turbine site. This includes removal of the granular and geotextile material from applicable areas.

3.5.1 Turbine Staging Area

The constructible area at each turbine location is approximately 100 m x 100 m and will be used as a construction staging area. Within the constructible area will be a turbine staging area for construction of the turbine foundation and assembly of the turbine, and a crane pad where the crane(s) will rest during turbine installation. The crane pad area will be approximately 25m x 60 m. The constructible areas would also be used for temporary storage of the turbine components, parking and foundation spoil pile.

Staging areas for the turbine components would not be graveled. Instead, top soil would be removed and stock piled, the subsoil's would be compacted and temporary laminated crane mats would be used under each of the crane stabilizer arms. If required, portions of the constructible area have been reduced on a site-by-site basis to avoid natural features and water bodies.

Turbine constructible areas would be actively used throughout the construction phase, to varying degrees during all construction activities at turbine siting areas. These same staging areas would be used in the future should maintenance during the operation of the wind turbine require large components to be removed/replaced from the turbine.

Once the turbine erection is complete, the prepared area around each turbine and the crane pads (25 m x 60 m) will be kept, while the remaining constructible area will be rehabilitated to pre-existing conditions.

3.5.2 Crane Paths

A heavy-lift crawler and mobile crane(s) would be used to assemble the turbines. The movement of the crane(s) between turbine sites, termed 'crane paths', would follow access roads and municipal roads where possible. The crane(s) would be, in some places, broken down and transported to other turbine locations for re-assembly. However, there may be instances where it is more effective, to minimize potential impact to municipal roads and avoid demobilization of the crane(s), to move the crane(s) along the most direct path possible between two turbines. All proposed crane paths will follow collector line corridors, with a constructible area of approximately 10 m wide. All proposed crane paths will be on private lands where landowners have agreements with the Proponent.

Crane paths will be approximately 10 m wide, be relatively level and rolled as required. Crane mats would be used where required to facilitate the crane moving through soft or wet areas.

Crane paths not located on roads would be initiated in conjunction with turbine assembly and would be used to move the crane(s) at the next turbine assembly area. These paths would be rehabilitated to pre-construction condition at the end of the construction phase.

3.5.3 Access Road Staging Area

A staging area would occur within the approximately 10 m staked constructible area along access roads for construction of the 4 m to 6 m wide access road.

Some access roads require turnaround areas for delivery trucks. These turnaround areas will be the same width as access roads, and include the same requirements for staging areas.

A staging area would occur within the approximately 50 m wide staked constructible area along access road entrances off municipal roads for construction of the 10 m to15 m wide access road entrances.

Portions of the constructible area will be reduced on a site-by-site basis to avoid natural features and water bodies, as appropriate.

Access road staging areas may be used for temporary laydown of turbine components during construction. No site preparation is required within these staging areas (provided they are in safe working condition), however in locations where turbine components are temporarily stored; these areas will be restored following turbine erection to pre-existing conditions.

3.5.4 Met Tower Staging Area

The constructible area to install a 100 m met tower would be approximately 150 m x 150 m. The constructible area to install a 60 m met tower would be approximately 100 m x 100 m. Within the constructible area will be a met tower staging area for construction of the met tower foundation, required anchor blocks and assembly of the met tower.

3.5.5 Roadside Collector and Transmission Line Staging Area

Roadside collector and transmission lines will be sited within the municipal road allowance. Final details of the line requirements will be developed at the detailed design stage in consultation with the Township and County. The entire span of the municipal road allowance has been included within the assessment of temporary land use, though this entire area will not be used for installation of the collector and/or transmission lines.

3.5.6 Central Staging Areas

Temporary central staging areas will be set up on Amherst Island and the mainland to facilitate construction of the proposed Project. Central staging areas are proposed on Amherst Island near the substation property, and the submarine cable landing area. On the mainland, central staging areas are proposed at the submarine and dock landing areas, near the Invista Transformer Station, and north east of the intersection of Jim Snow Drive and Taylor Kidd Blvd. The central staging areas vary in size from as small as approximately 30 m x 50 m to as large as approximately 25 acres.

The central staging areas will support the following construction operations, as required:

- Laydown of Project components including, but not limited to, wind turbine components, electrical cabling, pad-mount transformers, general construction materials such as gravel and steel.
- Parking areas for Contractors, Subcontractors and Other Contractors;
- Site Office(s);
- Rail unloading crane pad;
- Cable vault construction and installation;
- Docking facility construction and installation (for both permanent and temporary docks);

- Switching station construction;
- Batch Plant;
- Portable generators;
- Maintenance and tool storage;
- Water and rinsing facilities (water to be brought in by tanker);
- Above ground storage tank(s) ("AST's"), in properly contained spill containment structures;
- Equipment storage and maintenance area;
- Disposal facilities for various solid wastes;
- Temporary toilet facilities – self-contained with no on-site disposal; and,
- Waste disposal containers.

3.5.6.1 Batch Plant

A temporary concrete batch plant will be utilized on Amherst Island to facilitate construction of the proposed Project. The batch plant will be located approximately 600 m west of Stella 40 Foot Road, north of 2nd Concession Road. The prepared area for the batch plant will be approximately 120 m x 150 m.

Within the prepared area of the batch plant there will be a variety of functioning services and utilities. Facilities located within this area include a small laboratory office to test concrete quality, a potential office located within a trailer, a volumetric or by weight mobile batching plant, a shelter for concrete ad mixture, a washing station, water tank(s), a vertical cement tanker with a screw discharge area or an area for 1 m^3 of cement and bags, and a truck fueling station. This location will also provide parking for 6-10 concrete truck mixers, and serve as a stockpile area for concrete aggregate including sand, stone and fine aggregate.

The following discussion provides a general description of typical operation procedures for a concrete batch plant.

Aggregate materials (i.e., limestone, gravel, and sand) will be delivered to the batch plant by truck and will be deposited into storage piles. A front-end loader will transfer aggregate material from the storage piles into an above ground hopper. The hopper will gravity feed an inclined conveyor that will transfer the aggregates to aggregate compartments in the plant. Aggregate materials will then be gravity fed to the aggregate weigh scales located underneath each compartment. The aggregate weigh scale will feed a second conveyor, which will transfer the appropriate mass of material into a truck mixer.

Cementitious materials (i.e., Portland cements and slag) will be delivered by tanker and will be stored in one of two silos. The two silos may be filled simultaneously using blowers on the transport trucks and have a capacity of approximately 65 tonnes each. Cementitious materials from Silo #1 will be transferred to the cement scale by two enclosed cement augers.

Cementitious materials from Silo #2 will be transferred to the cement scale by gravity. The appropriate mass of cementitious material from the cement scale will then be gravity fed through a pipe into the truck mixer.

At the truck mixer, water will be introduced via a spray over the raw material drop point. If necessary, the water will be heated by a heater or boiler. Small quantities of admixes (i.e., chemical additives to achieve certain properties in concrete) may also be added. Each raw material batch will be mixed inside the truck mixer drum for approximately 15 minutes. The resulting wet concrete product will then be transported to the pour site with the mixer drum set at a constant rate of revolution.

If an electrical feed is not available at the batch plant site, power for the plant will have to be provided by a diesel generator set. As appropriate, the generator set will be housed in an outdoor enclosure adjacent to the batch plant.

There will be no discharge of wastewater to the environment which would require an approval for an industrial sewage works under Section 53 of the *Ontario Water Resource Act*. If water taking exceeds 50,000 litres/day, an application for a Permit To Take Water will be required under the *Ontario Water Resources Act*. It is anticipated that water for the concrete will come either from Lake Ontario (if the water is suitable) or otherwise will be trucked from the mainland. The water will be stored on site in a water tank(s). Waste water will be contained in a designated area where it can be removed from the site and disposed of appropriately according to the relevant regulations.

The batch plant will require an Environmental Compliance Approval and if required a Permit to Take Water from the Ministry of Environment. The necessary technical information pertaining to the proposed facility will be submitted to the Ministry of the Environment for their review, outside of the Renewable Energy Approval process. The temporary facility will be sited and operated in compliance with the appropriate provincial compliance requirements and municipal by-laws (if applicable).

3.5.6.2 Site Office(s)

Temporary site office(s) will be set up on Amherst Island and the mainland to facilitate construction of the proposed Project. The temporary site offices will not be serviced, and would be placed within the delineated construction work areas.

The site office(s) on Amherst Island will be located approximately 600 m west of Stella 40 Foot Road, north of 2nd Concession Road, near the location for the proposed batch plant. The prepared area for the site office(s) on Amherst Island will be approximately 50 m x 50 m. The area surrounding the site office(s) will serve as an area for parking.

The site office(s) on the mainland will be located within any of the proposed central staging areas. The prepared area for the site office(s) on the mainland will be approximately 50 m x 50 m. The area surrounding the site office(s) will serve as an area for parking.

The temporary site office(s) will be constructed using modular trailers. Main communication among the site(s) will likely be by radio and cell phones. Some land lines will be required and an internet rotor will be installed. A power source will most likely be obtained from nearby hydro poles. Temporary office(s) may be equipped with washrooms; however some modular trailer washroom facilities may be required to be brought on site.

3.5.7 Mainland Dock

As part of the proposed Project, a temporary docking facility is required on the mainland to meet shipping and construction requirements. The dock structure has to accommodate large barges and be capable of handling heavy items associated with the construction of the proposed Project. Post construction, all in water works will be removed. On shore abutment may remain depending on agreement with landowner.

The location of the dock on the mainland has not been finalized. There are three alternative locations for the mainland dock, which include:

1. East Dock Option: approximately 300 m east of the intersection of Jim Snow Drive and Bath Road.

2. Centre Dock Option: south of Jim Snow Drive.

3. West Dock Option: approximately 600 m west of the intersection of Jim Snow Drive and Bath Road.

The dock types under consideration are as follows (note: the labeled designations below correspond to conceptual design nomenclature information that was submitted to the DFO):

1. Dock Type Option 2 - Steel frame on rock lake bottom (posts) with concrete slab decking. Requires a concrete abutment.

2. Option 2A – Drive piles into lake bottom and level at pile caps. Platform (decking) constructed of a light steel frame or concrete slabs on the piles. Requires a concrete abutment.

3. Option 3 – Drive piles into lake bottom and level at pile caps. Platform is concrete slabs with sides and bottom that is back-filled with gravel. Requires a concrete abutment.

All of the above options include a length of fixed dock, with a single jack-up barge on the off-shore end that is adjustable due to water levels changes.

Dock length varies by location. Table 3.2 lists the approximate dock and jack-up barge lengths for each option.

Table 3.2: Doc and Jack-Up Barge Size Options

Mainland Dock Option	Dock Size [+/- 50%]	Jack-up barge Size [+/- 50%]	Dock Area above the water (including jack-up barge) [+/- 50%]
West Dock Option	85 m by 7 m	20 m by 12 m	835 m2
Centre Dock Option	165 m by 7 m	20 m by 12 m	1395 m2
East Dock Option	30 m by 7 m	20 m by 12 m	450 m2

In addition to the details provided in Table 3.2, the following information applies to the dock designs:

- The number of posts/piles will be very similar among options and the final number will not be known until all options are detailed. The current design is based on allowable bearing pressure on the rock, based on rock quality identified during test pitting on the Island. This is subject to confirmation when boreholes are drilled.
- Design with posts on lake bottom (Option 2) will be more complex than those with piles anchored in the bedrock (Options 2A and 3).
- Hydraulic cylinder ramps will be required for all the construction options to allow for water level adjustment. Total of 0.4 m^2 footprint required (base of two cylinders) for each dock.
- Each dock will require four dolphins to which the transportation barges will be tied. Each dolphin has an area of 0.75 m^2, a total of 3 m^2 per dock for dolphins.
- The dock width is approximately 7 m for most of its length. The jack-up barges on the end of each dock are 20 m long and 12 m wide. The dock width of approximately 7 m assumes that transportation trucks will cross Highway 33 in a perpendicular manner and there is no need for turning from the highway. If turning is required, additional dock width would be necessary.

3.5.8 Temporary Watercourse crossings

No temporary water crossings are expected as part of the proposed Project.

4.0 Project Activities

4.1 OVERVIEW OF ACTIVIES

A general overview of the activities during construction, operation, and decommissioning phases of the proposed Project are provided in Table 4.1.

Table 4.1: Key Project Activities

Project Phase	Activities
Construction	**Turbine and Met Tower Sites**
	Delineation of temporary work areas
	Completion of necessary vegetation clearing and site grading
	Access road construction and culvert installation
	Installation of turbine staging areas, access road staging areas and crane paths
	Installation of turbine and met tower foundations
	Installation of pad-mount transformers
	Turbine and met tower erection
	Installation of collector lines, and data cabling (if required) usually parallel to access roads
	Restoration of temporary work areas
	Substation Site
	Delineation of temporary work areas
	Completion of necessary vegetation clearing and site grading
	Installation of substation
	Restoration of temporary work areas
	Operations and Maintenance Building Site
	Delineation of temporary work areas
	Completion of necessary vegetation clearing and site grading
	Construction of operations and maintenance building
	Restoration of temporary work areas
	Switching Station Site
	Delineation of temporary work areas
	Completion of necessary vegetation clearing and site grading
	Installation of switching station and connection with grid
	Reclamation of temporary work areas
	Additional Activities
	Preparation of central staging areas
	Completion of permanent access roads
	Installation of batch plant and site office(s)
	Installation of collector lines, transmission lines and submarine cable
	Installation of cable vaults
	Installation (and removal, if required) of temporary dock
	Installation of permanent dock
	Reclamation of all other temporary work areas

Table 4.1: Key Project Activities

Project Phase	Activities
Operation	**Turbine and Met Tower Sites**
	Preventative and routine maintenance
	Unplanned maintenance
	Meter calibrations
	Grounds keeping
	Substation Site
	Preventative and routine maintenance
	Unplanned maintenance
	Operations and Maintenance Building Site
	Preventative and routine maintenance
	Unplanned maintenance
	Remote wind farm condition monitoring
	Switching Station Site
	Preventative maintenance
	Unplanned maintenance
	Additional Activities
	Collector line, transmission line and submarine cable maintenance
	Cable vault maintenance
	Permanent dock maintenance
Decommissioning	**Turbine and Met Tower Sites**
	Removal of turbine and met tower infrastructure
	Site grading (dependent upon new proposed use)
	Possible removal of access roads dependent upon agreement with property owner
	Possible excavation and removal of collector lines depending upon agreement with property owner
	Substation Site
	Removal of substation
	Operations and Maintenance Building Site
	Removal of operations and maintenance building, dependent on agreement with property owner
	Switching Station Site
	Removal of switching station
	Additional Activities
	Disconnection from provincial grid
	Removal of collector system in municipal right of way (remove wires and poles as required, dependent upon agreement with municipality)
	Removal of permanent dock (if required)

4.2 TIMING AND SCHEDULING

The projected start dates for construction, operation and decommissioning activities are provided in the table below.

Construction is anticipated to commence in Fall of 2014 and finish early 2016. Operation and maintenance activities would occur as required throughout the life of the Project. The specific schedule for decommissioning would be determined at the time it is undertaken.

The wind turbines used for the Project can be expected to be in service for the term of the 20 year Ontario Power Authority Power Purchase Agreement. Following the term of the contract, a decision would be made regarding whether to extend the life of the facility or to decommission. Barring routine scheduled maintenance, the turbines are expected to be operational 24 hours a day, 7 days a week, assuming appropriate wind conditions.

Table 4.2: Major Project Phases and Anticipated Scheduling Milestones

Construction	Operation	Decommissioning/Repowering
Fall 2014 to early 2016	Q2 2016	2035

4.3 KEY PROCESS ACTIVITIES

4.3.1 Waste Generation

Construction and Decommissioning

During construction and decommissioning, waste material would be generated at, and transported from, the Project Location. Waste material produced by the Project is expected to consist of construction material (e.g. excess fill, soil, brush, scrap lumber and metal, banding, plastic wrap removed from palletized goods, equipment packaging, grease and oil, steel, etc.) and a minor amount of domestic waste (i.e. garbage, recycling and organics). As requested by Loyalist Township no waste material will be deposited at the Amherst Island waste disposal facility.

Operation

During operation, waste will be generated through general maintenance and office activities. Lubricating and hydraulic oils associated with Project maintenance and operation would be used for the Project, and waste materials such as oily rags, empty grease/oil containers and cleaning fluids in low volumes. Although the exact oil and grease requirements for the Project are not known at this time, oil changes will be completed in accordance with annual analysis recommendations. An oil change is not likely to occur until the findings of the annual analysis indicate that it is required or via the manufacturers maintenance schedule recommendations. The amount of oil and grease stored on site would depend on availability, transportation schedules, and the service cycle.

A minor amount of domestic waste (i.e. garbage, recycling, and organics), would be generated during standard operation and maintenance activities.

Waste materials will be temporarily stored at the operations and maintenance building and would require reuse, recycling, and/or disposal at an appropriate facility. There would be no on-site disposal of waste during the operation of the Project. Used oil would be stored in a designated area of the operations and maintenance building, and picked up by certified contractor with the appropriate manifests in place.

4.3.2 Air Emissions and Dust Generation

Construction and Decommissioning

Construction and decommissioning activities will rely on the use of a wide range of mobile equipment, such as bulldozers, dump trucks and cranes. The engine exhaust from these vehicles represents a source of particulate and other emissions.

Construction related traffic and various construction activities (e.g. excavation, grading, soil stripping, and exposed areas) have the potential to create dust emission. However the effects are anticipated to be short-term in duration and localized.

Operation

During operations, minor localized air emissions would occur from the periodic use of maintenance equipment over the life of the Project and from personnel vehicles and waste management haulers travelling to and from the operations and maintenance building during regular business hours. Operations related traffic has the potential to create dust in the immediate vicinity of the Project however the effects are anticipated to be short-term in duration and localized.

An examination of the Project's air emissions will be undertaken in context of the requirements of O. Reg. 419/05, and will be provided in the *Draft Design and Operations Report*.

Acoustic emissions from the Project (turbines and substation) will be assessed in detail during the REA process. All emissions will be managed within the limits set by regulatory requirements.

4.3.3 Noise

Construction and Decommissioning

During construction, noise would be generated by the operation of heavy equipment at each of the work areas and associated traffic on-site and on haul routes. The effects are anticipated to be short-term in duration and localized.

Operation

Mechanical and aerodynamic noise would be emitted from the wind turbines in addition to environmental noise from the transformers located at the substation. A *Draft Noise Assessment Report* has been prepared for the proposed Project in accordance with the MOE *Noise Guidelines for Wind Farms*, dated October 2008 and O. Reg. 359/09.

4.3.4 Hazardous Materials

Construction and Decommissioning

Hazardous materials to be used during the course of construction are related to fuels, lubricants and fluids that are required for use in construction equipment. These materials will be stored in appropriate storage units during the construction phase of the Project by the construction contractor. Designated storage unit areas and the type of storage units will be confirmed by the construction contractor prior to construction.

Fueling of construction vehicles will take place within designated fueling areas (complying with all applicable regulations) for example such as the operation and maintenance building location, the project laydown (central construction) area and individual work areas. The method of fuel storage (during construction) would be with the use of above ground storage tank(s) ("AST's) (complying with provincial regulations - i.e. double walled with spill containment). It is anticipated that three (3) AST's will be used, each holding a volume of approximately 1000 litres. The fuel would be diesel and regular petrol for use by the construction equipment. An AST would not be used during operation of the project. It should be noted that licensed mobile fuel delivery vehicles will be utilized to service equipment not located at the locations referenced above. This methodology is consistent with best practices (for fuelling vehicles) used in the Ontario construction industry and other jurisdictions.

Disposal of any hazardous materials will be in accordance with regulatory requirements.

Operation

Hazardous materials are limited to lubricants and fluids that would be on-site for the operation and maintenance of the turbines, substation, and other equipment. These materials will be stored in appropriate storage containers during the operation phase by the operation contractor. Designated storage areas and the type of storage areas would be confirmed by the operation contractor prior to operation. Disposal of any hazardous materials will be in accordance with regulatory requirements. There are no other known hazardous by-products of the wind energy generation process itself.

4.3.5 Sewage

Construction and Decommissioning

Sanitary waste generated by the construction and decommissioning crews will be collected via portable toilets and wash stations supplied by a third party contractor. Disposal of these wastes

will be the responsibility of the contracted party and will be done in accordance with regulatory requirements.

Operation

The operations and maintenance building would contain restroom and shower facilities that would be serviced by a septic system. Based on the Ontario Building Code criteria, it is anticipated that each employee will generate 125 L of wastewater per shift with the use of showers and other common daily general usage. A conservative estimate of 20 employees was assumed to calculate total sewage generation at 2,500 L/day. An underground septic tank (capacity of 10,000L) would service the operations and maintenance building. Therefore the septic system will have a capacity of four times the required volume.

The final design of the septic system would conform to local building code and health unit requirements.

As appropriate, the contents of the septic tank will be pumped and hauled for off-site disposal by a license waste hauler. It is not anticipated that any chemical inputs will be required for the proper functioning of the septic system.

4.3.6 Stormwater

Construction and Decommissioning

During construction and decommissioning, proper grading would be conducted and mitigation measure implemented to reduce potential for runoff at the work areas.

Operation

The Project is not anticipated to require significant alteration to surface water runoff, or to involve the storage of surface water. As the Subject Property is of limited topographic relief, erosion of excavated materials and changes to stormwater runoff is not anticipated. If required a Stormwater Management Plan would be implemented for the substation property. The Stormwater Management Plan, will be designed in compliance with the "*Stormwater Management Planning and Design Manual*" (MOE, 2003) and Cataraqui Region Conservation Authority (CRCA) requirements.

4.3.7 Water-taking Activities

Construction and Decommissioning

There is potential for groundwater to be encountered during the installation of the turbine foundations, access roads, underground collector lines, cable vaults, substation, switching station and operations and maintenance building. As such, it is possible that some dewatering activities may be required when installing these project components; however withdrawal amounts are anticipated to be below 50,000 L/day.

It is possible that rainwater may collect in the open excavations during construction. It is possible that some dewatering activities would be required.

It is possible that some watercourse crossings would require the use of a dam and pump, where the water may be moved by mechanical means.

Operation

Aboveground potable and non-potable water tanks (capacity of 10,000L) would service the operations and maintenance building. The above ground potable water tank will be replenished as required by a licensed hauler.

No groundwater or surface water supplies are anticipated to be used for the facility. It is expected that water will be used to hose down the floor or the workshop. A sump/drainage pit will collect the residues and drain to the septic system.

5.0 Description of Potential Environmental Effects

O. Reg. 359/09 requires that any adverse environmental effects that may result from engaging in the proposed Project be described in the REA application. The term "environment" in O. Reg. 359/09 has the same meaning as in the *Environmental Assessment Act*, and includes the natural, physical, cultural, and socio-economic environment.

The following is a high level summary of the methodology that has been applied in order to identify potential adverse environmental effects that may result from construction and operation of the Project:

- Collect information on the existing environment using available background information, consultation with stakeholders, and site investigations.
- Review the proposed Project activities in order to predict the potential interactions between the Project and environment.
- Identify potential interactions that could cause an adverse effect on the environment.
- Develop measures to avoid, mitigate, and monitor potential adverse effects.

The following environmental features have been assessed as part of the REA application process:

- Heritage and Archaeological Resources;
- Natural Heritage Resources;
- Water Bodies and Aquatic Resources;
- Air, Odour, Dust;
- Environmental Noise;
- Land Use and Socio-Economic Resources;
- Provincial and Local Infrastructure; and,
- Public Health and Safety.

Mapping provided in **Appendix A** illustrates the natural environment and socio-economic features and shows the 300 m study area around the Project Location boundary. The detailed studies in the *Draft Natural Heritage Assessment and Environmental Impact Study (NHA/EIS)* and the *Draft Water Assessment and Water Body Report (WA/WBR),* and subsequent addenda to each report, are completed in the context of a 120 m zone of investigation, also shown on mapping provided in **Appendix A**.

For some natural environment and socio-economic features, avoidance during Project siting and mitigation measures are anticipated to eliminate all effects. The application of these principles has greatly reduced the potential for adverse environmental effects from the Project.

The key performance objective for each of the features noted above is avoiding and/or minimizing potential effects (through the use of appropriate mitigation measures) to the features throughout the construction, operation and decommissioning phases of the Project. The proposed mitigation measures would assist in achieving this performance objective.

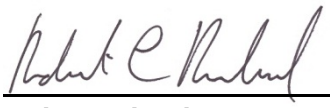
A summary of potential effects and mitigation strategies with corresponding performance objectives, monitoring plans and contingency measures that have been identified which may result from the construction, operation and decommissioning of the Project is provided in **Appendix B**.

6.0 Closure

The Amherst Island Wind Energy Project *Draft Project Description Report* has been prepared by Stantec for Windlectric in accordance with Ontario Regulation 359/09, and in consideration of the *Technical Guide to Renewable Energy Approvals*.

This report has been prepared by Stantec Consulting Ltd. for the sole benefit of Windlectric, and may not be used by any third party without the express written consent of Windlectric and Stantec Consulting Ltd. The data presented in this report are in accordance with Stantec's understanding of the Project as it was presented at the time of the Report.

STANTEC CONSULTING LTD.



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